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## PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number  
067456-5006-US

### CERTIFICATE OF ELECTRONIC TRANSMISSION UNDER 37

C.F.R. 1.8

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on 6/10/03

  
Signature: Jere Valles

Application Number: 09/096,593

Filed: June 12, 1998

Inventor: O'CONNOR, et al.

Art Unit/Conf. No.: 1641/1989

Examiner: COOK, Lisa V.

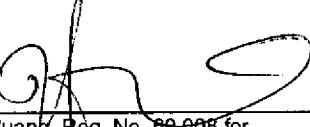
Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a Notice of Appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided

I am the attorney or agent of record.

  
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415-442-1000

Telephone number

06/10/2008

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below\*.

\*Total of 1 forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450. If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.  
1-SF/7703785.1

PATENT  
Attorney Docket No. 067456-5006US  
Former/Client Docket No.: A-64559-3

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

O'CONNOR *et al.*

Serial No.: 09/096,593

Filed: June 12, 1998

For: *Electronic Methods for the  
Detection of Analytes*

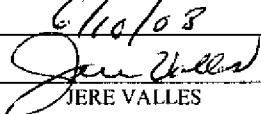
Examiner: COOK, Lisa V.

Art Unit: 1641 Conf. No.: 1989

**CERTIFICATE OF ELECTRONIC TRANSMISSION UNDER  
37 C.F.R. 1.8**

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Dated: 6/10/08

Signed: 

JERE VALLES

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

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P.O. Box 1450  
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Sir:

In accordance with 1296 Off. Gaz. Pat. Office 67 (July 12, 2005), Applicants request review of the Examiner's final rejections of claims 20, 30, 34 and 36 under 35 U.S.C. § 103(a) over Hollis *et al.* (WO 93/22678) ("Hollis") in view of Agladze (Metallurgy and Foundry Engineering (1997) 23(2), 127-137) ("Agladze"), rejections of claims 31-33 and 37-39 under 35 U.S.C. § 103(a) over Hollis in view of Agladze, and further in view of Kossovsky *et al.* US Patent No. 5,585,646 ("Kossovsky"), and rejection of claim 35 under 35 U.S.C. § 103 (a) over Hollis, in view of Agladze and further in view of Wohlstadter *et al.* US Patent No. 6,090,545 ("Wohlstadter").

**I. Rejection of claims 20, 30, 34 and 36**

**A. The Examiner has committed clear legal error in citing Agladze**  
Agladze is non-analogous art.

"In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular

problem with which the inventor was concerned." *In re Oetiker*, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). M.P.E.P. §2141.01(a).

The instant invention is directed to measuring electrodes comprising two passivation agent monolayer species, one of which comprises a protein binding ligand. In stark contrast, *Agladze* discusses studies in the field of metal corrosion. Therefore, *Agladze* is not in the field of applicant's endeavor.

As for the latter, a reference in a different field from that of the inventor's endeavor may be reasonably pertinent only if "because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." *In re ICON Health and Fitness Inc.*, 83 USPQ2d 1746 (Fed. Cir. 2007) (citing *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992)).

Here the particular problem with which the inventor was concerned is the detection of biological target analytes, utilizing monolayers. Thus a "passivation agent layer facilitates the maintenance of the target analyte away from the surface of the electrode," instant application, page 34, lines 13-15. In *Agladze* the formation of a passivation film results in retardation of electrode reactions. See page 136, lines 23-24. Specifically *Agladze* discussed the passivation of iron, which logically, would not have commended itself to the attention of an inventor who is interested in measuring electrodes comprising two passivation agent monolayer species, one of which comprises a protein binding ligand. Therefore *Agladze* is not reasonably pertinent to the particular problem with which the inventors are concerned - the efficiency of binding between the target analyte and the binding ligand.

The Examiner notes that: "The protection of the electrodes (from erosion) is deemed pertinent to the instant invention because corrosion could destroy the electrode." Office Action dated December 10, 2007 ("Office Action"). However, as the Applicants argued at page 9 of the Response dated April 18, 2007, the instant application is not directed to corrosion of an electrode, but rather is directed to the detection of analyte with an electrode. This is especially true because electrode of the present invention can be "gold, platinum, and graphite" as cited in dependent claim 37. As such, corrosion is not a concern.

***B. The Examiner committed clear factual error by finding that Hollis teaches "a passivation agent monolayer"***

The Examiner asserts that the apparatus of *Hollis* includes "a passivation agent monolayer." Office Action, at page 4. Specifically, the Examiner refers to figure 26 and page 29 lines 27-30 for the teaching that "the sensor array may include a[n] aestivating layer (passivation monolayer)". *Id.* at page 5. However, the passivation layer disclosed in figure 26 of *Hollis* is not a monolayer. *Hollis* states "[t]he wells are passivated with a thin protective layer (not shown), such as silicon nitride or aluminum oxide to prevent degradation of the CCD device due to exposure to aqueous solution." Page 20, lines 16-19. On

page 29, lines 13-16 *Hollis* states “[p]assivating materials can be hydrophobic materials such as fluorine-terminated fluorocarbons or the derivatives or hexamethyldisilizane.” There is no other description of a passivation layer in *Hollis*.

In the first example from *Hollis* the “protection layer” of *Hollis* is composed of silicon nitride or aluminum oxide which is amorphous materials and is not monolayer. In the second example from *Hollis*, the suggested materials are fluorine-terminated fluorocarbons or the derivatives of hexadimethyldisilizane. Such passivating materials do not form monolayers over the glue layer.

The Examiner notes that “Applicant has acknowledged that Hollis describes a passivation layer on the electrodes.” However, a “layer” is not the same as a “monolayer” - “layer” is a genus, and “monolayer” is a species of a layer: it is a layer that is one-molecule thick. A disclosure of a genus is not the same as a disclosure of a species. In fact, nowhere in *Hollis* is a “monolayer” mentioned or described.

The Examiner also asserts “because Hollis teaches electrode coating procedures to form passivation layers and such coatings read on monolayer preparations.” (Emphasis added). Office Action, at page 12. However, in obviousness analysis, it is irrelevant whether prior art “read on” a claimed element. The issue is whether the prior art disclose the claimed element, or borrowing the terminology from anticipation analysis, whether the claims “read on” the prior art. Thus, in determining if *Hollis* discloses a “monolayer” the question is whether “monolayer preparations” read on “passivation layers”, not the other way around as asserted by the Examiner. As presented above, they do not.

**C. The Examiner committed clear legal and factual errors in finding that Agladze teaches that the two species (OH ions and anion) are in the same layer and that they are “covalently attached” based only on the Abstract of Agladze**

The Examiner concedes that “Hollis et al. differ from the instant invention in not specifically teaching that the passivation layer (passivation agent monolayer) comprises two passivation species,” but asserts that *Agladze* “discloses that passivation films (layers) can modified [sic] electrode reactivity reactions via OH ions (species one) and anions (species two).” Office Action, at page 6 (citing the Abstract of *Agladze*). Thus, based on the Abstract of *Agladze* the Examiner concludes that *Agladze* teaches that the OH ions and the anions are in the same layer. However, there is no such teaching in *Agladze* when considering the disclosure of *Agladze* as a whole.

“A prior art reference must be considered in its entirety, i.e. as a whole, including the portions that would lead away from the claimed invention.” M.P.E.P. § 2141.02. VI. (Emphasis original). The Abstract of *Agladze* states that “...the formation of primary passive film consisting of adsorbed OH ions

and anions results in a strong retardation of electrode reactions..." See also *Agladze*, page 136, lines 23-24. However, reading of the whole teachings reveals that *Agladze* only compares the differing affect of these different species and studies the species independently of one another. In fact, *Agladze* only provides the conjecture that "it is reasonable to assume that the primary passive film consists mainly of adsorbed hydroxide groups and anions adsorbed either according to solvent displacement or hydrogen-bonding mechanisms." Page 132, lines 22-24 (emphasis added). There is no teaching that the species are actually present at the same time.

Moreover, claims of the present invention require that the passivation species of the monolayer be covalently attached. *Agladze* discloses "adsorbed OH ions and anions," and the Examiner states that "[t]he prior art has shown that 'adsorption' can produce covalent bonded passivation monolayers." (Emphasis added). Office Action, at page 13. However, there is no disclosure in *Agladze* that the anions and cations form bonds with the metal. In fact, *Agladze* teaches that the adsorbed species are not covalently attached but, rather, are held by physical forces that allow desorption: "The steady-state concentration of surface active sites in this case will be determined by the balance of the rates of reactions of metal dissolution (1', 2'), adsorption and desorption of passivating film." Page 134, lines 29-31 (emphasis added).

**D. *There is no motivation to combine Agladze with Hollis to reach the claimed invention***

"[W]hen the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious." *KSR International Co. v. Teleflex Inc.* 1727, 1740. S.C.t (2007). "[A] reference may teach away when a person skilled in the art, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re ICON*, at 1751.

The present invention requires "passivation species comprising a protein binding ligand." In contrast, *Hollis* discloses that in order to add a probe (i.e. DNA) to the surface the "passivating layer" has to be ablated to expose the "glue layer" under it. See Fig. 26A-26D of *Hollis*. Thus, an inventor, upon reading *Hollis*, would ablate the passivating layer from the surface of the electrode and attach a probe to the glue layer under, not the passivating layer. This is a path opposite to what the Applicants had taken, to have "a passivation agent monolayer comprising ... second passivation species comprising a protein binding ligand."

**E. There is no a reasonable expectation of success by combining Hollis and Agladze**

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR*, at 1739. Thus evidence showing there was no reasonable expectation of success may support a conclusion of nonobviousness. *In re Rinehart*, 531 F.2d 1048 (CCPA 1976).

Assuming that *Agladze* does disclose a layer comprised of two species, OH ions and anions as the examiner has suggested, combining *Hollis* and *Agladze* would arrive at an electrode comprises a layer wherein the layer comprises two species (OH ions and anions). However, “OH ions and anions” do not form “monolayers” as they are taught in the instant application. One of the functions of the monolayer is to keep charge carriers away from the electrode surface; clearly, OH ions and anions are charge carriers. Thus, the electrode resulting from the combination of *Hollis* and *Agladze* can not be used to detect analyte as the claimed invention because it would not work. Accordingly the proposed combination is not enabling and there is no expectation of success by combining *Agladze* and *Hollis*.

**II. Rejections of claims 31-33, 35, and 37-39**

For the reasons set forth previously, *Hollis* and *Agladze* combined do not render claims 20 and 30 obvious. Thus claims 31-33, 35, and 37-39 that depend from claims 20 and 30 are not obvious as well.

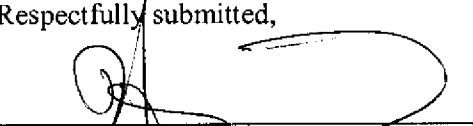
**III. Conclusion**

Prompt and favorable consideration of this Request is respectfully requested. If the Examiner believes, for any reasons, that personal communication will expedite prosecution of this application, Examiner and the Panel are invited to telephone the undersigned at the number provided below.

The Commissioner is authorized to charge any additional fees associated with this communication, including any necessary fees for extension of time or additional claims, and/or credit any overpayment to Deposit Account No. 50-0310 (Docket No.: 067456-5006US).

Dated: 06/10/2008  
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